



Goddard Procedural Requirements (GPR)

DIRECTIVE NO.	<u>GPR 8730.6B</u>	APPROVED BY Signature:	<u>Original Signed By</u>
EFFECTIVE DATE:	<u>January 30, 2014</u>	NAME:	<u>Judith N. Bruner</u>
EXPIRATION DATE:	<u>January 30, 2019</u>	TITLE:	<u>Director, Safety and Mission Assurance</u>

COMPLIANCE IS MANDATORY

Responsible Office: 300/ Safety and Mission Assurance Directorate

Title: Electrostatic Discharge (ESD) Control

PREFACE

P.1 PURPOSE

This document establishes the requirements for implementing Electrostatic Discharge (ESD) control for Goddard Space Flight Center (GSFC) projects and internal operations which complies with the requirements of NPD 8730.5, NASA Quality Assurance Program Policy. This directive establishes ANSI/ESD S20.20, Standard for the Development of an Electrostatic Discharge Control Program for – Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices), as the requirements baseline for ESD control. 300-PG-8730.6.1, GSFC Electrostatic Discharge Control Plan, defines the ESD control plan for applicable work performed in GSFC facilities at the Wallops Flight Facility (WFF) and the Greenbelt Campus. Organizational responsibilities relative to this directive are defined herein.

P.2 APPLICABILITY

This GPR shall apply to all GSFC projects and to all organizations within GSFC-Greenbelt and WFF that process ESD Sensitive (ESDS) mission hardware and critical ground support equipment, including engineering models or engineering test units. The ESD sensitivity levels considered to be in scope for this directive are defined in 300-PG-8730.6.1, section 4. For all other applications where ESD sensitive items are handled, including outdoor field operations, these requirements are recommended, as applicable and practical.

P.3 AUTHORITY

NPD 8730.5, NASA Quality Assurance Program Policy

P.4 APPLICABLE DOCUMENTS

- ANSI/ESD S20.20, Standard for the development of an ESD Control Program for the Protection of Electrical and Electronic Parts, Assemblies, and Equipment (Excluding Electrically Initiated Explosive Devices).
- NPR1441.1, NASA Record Retention Schedules
- GPR1410.2, Configuration Management
- GPR 1700.7, Electrical Safety

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- e. GPR 8730.1, Calibration and Metrology
- f. 300-PG-8730.6.1, GSFC Electrostatic Discharge Control

P.5 CANCELLATION

- a. GPR 8730.6A, Electrostatic Discharge (ESD) Control
- b. GSFC-WM-001B, Workmanship Manual (WM) for Electrostatic Discharge Control (Excluding Electrically Initiated Explosive Devices)

P.6 SAFETY

Properly maintained and calibrated equipment is essential for the effective and safe processing of flight hardware and ground support systems and the safe and effective performance of our flight projects (See GPR 8730.1). The safety of all hardware processed and handled in ESD controlled areas is also dependent on the proper grounding of the facility and of the common ground points, the proper maintenance and operation of all safety equipment such as Ground Fault Circuit Interrupters (GFCIs) when employing conductive work surfaces, and compliance with resistance requirements for all dissipative surfaces. The methods prescribed by ANSI/ESD S20.20 and 300-PG-8730.6.1 are designed for the protection of hardware from damaging electrostatic discharges and are not intended to guarantee the safety of the operators from all possible electrical hazards, therefore, additional human safety precautions may be required and shall be in accordance with GPR 1700.7, Electrical Safety.

P.7 TRAINING

ANSI/ESD S20.20 and 300-PG-8730.6.1 describe the training requirements associated with ESD control.

For in-house GSFC operations 300-PG-8730.6.1 imposes requirements for personnel certification and training requirements for a broad range of job duties associated with ESD control within GSFC facilities. 300-PG-8730.6.1 also defines the sources of training or types of trainers required for each personnel role in the GSFC ESD control plan.

Training to 300-PG-8730.6.1 satisfies legacy contractual requirements, for working within GSFC facilities, for training to GSFC-WM-001 (Cancelled).

P.8 RECORDS

Records required by the processes described herein shall be retained in accordance with GPR 1441.1.

Records shall be as follows:

Record Title	Record Custodian	Retention
Training records	Civil Servants: Office of Human Resources and/or Supervisor, as described in GPR 3410.2 On-site Contractors: Company retains records.	NRRS 3/33G2* -- Destroy 5 years after employee discontinues or completes training.
ESD workstation records	Laboratory Manager or owning project manager when there is no lab manager	NRRS 8/107* -Temporary- Destroy/delete between 5 & 30 years after program/project termination.
Temporary/Intermittent workstation records	Project Manager	NRRS 8/109*- Temporary- Destroy/delete when between 2 & 15 years old. Do not retain longer than life of program/project plus 5 years.
Monthly ESD workstation certification Summary	Code 300 ESD Program Lead	NRRS 5/35A.1- Destroy 3 years after completion of final production order for the related component.

*NRRS – NASA Records Retention Schedules ([NPR 1441.1](#))

P.9 MEASUREMENT/VERIFICATION

The manager of the ESD Control Program in Code 300 shall collect results of the ESD workstation certifications and provide summary data for presentation to the Center Director monthly including, as a minimum, the following:

- number of workstations inspected by the certification process
- number of workstations certified
- number of workstations failing certification

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PROCEDURES

In this document, a requirement is identified by “shall,” a good practice by “should,” permission by “may” or “can,” expectation by “will,” and descriptive material by “is.”

1. The Safety and Mission Assurance (SMA) Directorate shall have the responsibility for establishing and technical authority for the ESD Control Program.
2. 300-PG-8730.6.1 shall be the GSFC ESD Control implementation plan for operations at the Greenbelt and Wallops Flight Facilities and be traceable to ANSI/ESD S20.20 which is required by NPR 8730.5 for all Programs and Projects. This plan also applies to contractor operated facilities which are the property of GSFC.
3. The SMA Directorate shall maintain 300-PG-8730.6.1 in accordance with the requirements of GPR 1410.2 Configuration Management (CM) and the CM requirements given in 300-PG-8730.6.1.
4. All Directorates shall impose 300-PG-8730.6.1 on services contracts whose statements of work includes processing of applicable ESDS equipment in the GSFC Greenbelt and Wallops Flight Facilities. (Reference paragraph P.2 above for definitions of applicability).
5. Flight projects shall require all suppliers who are external to NASA GSFC, and who process applicable hardware in facilities not owned or operated by GSFC, to meet the requirements of ANSI/ESD S20.20. 300-PG-8739.6.1 is not for use outside of GSFC- owned and operated facilities.

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Appendix A – Definitions

See 300-PG-8730.6.1 for definitions related to Electrostatic Discharge Control.

Appendix B – Acronyms

ANSI	American National Standards Institution
CM	Configuration Management
ESD	Electrostatic Discharge
ESDS	Electrostatic Discharge Sensitive
GSFC	Goddard Space Flight Center
GFCI	Ground Fault Circuit Interrupter
GPR	Goddard Procedural Requirement
NASA	National Aeronautics and Space Administration
NPD	NASA Policy Directive
NPR	NASA Procedural Requirement
NRRS	NASA Records Retention Schedule
SMA	Safety and Mission Assurance
WFF	Wallops Flight Facility
WM	Workmanship Manual

CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	01/05/2006	Initial Release
A	06/07/2010	<p>Added requirements to:</p> <ol style="list-style-type: none"> 1. Establish the parent requirements for ANSI/ESD S20.20, this GPR and GSFC-WM-001 2. Establish GSFC-WM-001 as the ANSI/ESD S20.20 implementation plan for NASA GSFC. 3. Require compliance with GSFC-WM-001 by all projects (flight and developmental) processing hardware in GSFC facilities 4. Clarify that GSFC-WM-001 applies internally to GSFC only. 5. Clarify applicability of GSFC-WM-001 for visiting principle investigators (PIs) and for field operations. 6. Added, https://ossmacm.gsfc.nasa.gov/index.cfm, 7. Provide a point of contact for workspace certification and garment services.
B	01/30/2014	<p>Added/removed requirements to:</p> <ol style="list-style-type: none"> 1. Establish 300-PG-8730.6.1 as the ANSI/ESD S20.20 implementation plan for NASA GSFC differentiating the former for in-house operations and the latter for operations in non-GSFC facilities. 2. Replace mention of GSFC-WM-001 within for 300-PG-8730.6.1. 3. Add applicable document and removed one that was not mentioned in the text. 4. Update the “Note” in P.7 concerning legacy contractual requirements. 5. Reformat Training section and added language clarifying requirements. 6. Reformat Records section. 7. Clarify the language in Section 2 of Procedures concerning facilities 300-PG-8730.6.1 is applicable to.